IN THE CLAIMS

Please amend the claims as follows:

Claim 1. An optical recording method for recording mark length- modulated information with a plurality of recording mark lengths by irradiating a recording medium with a light, the optical recording method comprising the steps of:

when a time length of one recording mark is denoted nT (T reference clock period equal to or lean than 25 ns, and n is a natural number equal to or more than 2), dividing the time length of the recording mark nT into

$$\eta_1 T, \alpha_1 T, \beta_1 T, \alpha_2 T, \beta_2 T, \ldots, \alpha_m T, \beta_m T, \eta_2 T$$

in that order (m is a pulse division number; [Σhdi] $\underline{\Sigma_i}(\alpha_i + \beta_i) + \eta_1 + \eta_2 = n$; α_i [$(1 \leqq i \leqq m-1)$] $\underline{(1 \leq i \leq m)}$ is a real number larger than 0; β_i ($\leqq i \leqq m-1$) is a real number larger than 0; β_m is a real number larger than or equal to 0; $\alpha i + \beta i$ ($2 \leqq i \leqq m-1$) or [β_i-1] $\underline{\beta_{i-1}}$ + αi ($2 \leqq i \leqq m-1$) is kept constant independently of said real number I; and η_1 and η_2 are real numbers between -2 and 2);

radiating recording light with a recording power Pw, in a time duration of $\alpha_i T$ ($1 \leqq i \leqq m$); and

radiating recording light with a bias power Pb, in a time duration of $\beta_i T$($1 \leqq i \leqq m-1$), the bias power being $Pb_1 < Pw_i$ and $Pb_i < Pw_{i+1}$;

wherein the pulse division number m is 2 or more for the time duration of at least one recording mark and meets $n/m \geqq 1.25$ for the time length of all the recording marks,

further wherein when the same pulse division number m is used on at least two recording marks with different n values, a difference mark length is formed by changing at least one of β_i, β_{m-1}, and βm.

Claim 2. An optical recording method according to claim 1, wherein $\alpha_i + \beta_i$ ($2 \leqq i \leqq m-1$) or [β_i-1] $\underline{\beta_{i-1}}$ + α_i ($2 \leqq i \leqq$ m-l) is 2 independently of said real number i.

Claim 3. An optical recording method according to claim 1, wherein α_i is kept constant as a constant value αc where said is ($2 \leqq i \leqq m-1$).

Claim 4. An optical recording method according to claim 1, wherein α_i ($2 \leqq i \leqq m-1$) is kept constant in the time length of the recording mark with having a pulse division number m being at least 3.

Claim 5. An optical recording method according to claim 1, wherein when performing a mark length modulation scheme recording on the same recording medium by using a plurality of linear velocities v while keeping vxT constant,

for m equal to or greater than 2, ($\alpha_i+\beta_i$) in $2 \leqq i \leqq$ m-l is kept constant independently of the linear velocity [Pw_i] $\underline{Pw_i}$, Pb_i and Pe in each i are kept almost constant independently of the linear velocity and αi ($2 \leqq i \leqq m$) is decreased as the linear velocity lowers.

Claim 6. An optical recording method according to claim 1, wherein when performing a mark length modulation scheme recording on the same recording medium by using a plurality of linear velocities v while keeping vxT constant,

for m equal to or greater than 2, ([β_i-1]$\underline{\beta_{i-1}}$ + α_i) in

$2 \leqq i \leqq m$ are kept constant independently of the linear velocity, [Pw_1] Pw_i,[Pb_1] Pb_i and Pe in each I are kept almost constant independently of the linear velocity, and α_i ($2 \leqq i \leqq m$) are decreased as the linear velocity lowers.

Claim 7. An optical recording according to claim 5 or 6, wherein $\alpha_i T$ ($2 \leqq i \leqq m-1$) is kept almost constant independently of the linear velocity.

Claim 8. An optical recording method according to claim 1, the phase change type optical recording medium having a recording layer made of $M_z\ Ge_y\ (Sb_x\ Te_1\text{-}x)_{1\text{-}y\text{-}z}$ alloy (where [$0 \leqq_z \leqq 0.1$] $0 \leqq_z \leqq 0.1$ [$0<_y \leqq 0.3$] $0< y \leq 0.3$, $0.8 \leq x$; and

M is at least one of In, Ga, Si, Sn, Pb Pd, Pt, Zn, Au, Ag, Zr, Hf, V, Nb, Ta, Cr, Co, Mo, Mn, Bi, O, N and S).

Claim 9. (Amended): [An] A non-transitory optical information recording medium having a recording layer, containing excessive Sb in SbTe eutectic point, in which phase change is made reciprocally between a crystal state and amorphous state with optical characteristic being differed from each other by irradiation of an optical beam, wherein said crystal condition is defined as polycrystal made of a substantial single crystal phase of a hexagonal crystal.

Claim 10. An optical information recording medium according to claim 9, wherein said recording layer is made of $M_z\ Ge_y\ (Sb_x\ Te_{1\text{-}x})_{1\text{-}y\text{-}z}$ alloy (where $0 \leqq z \leqq 0.1$ $0<y \leqq 0.3$, $0.8 \leqq x$; and

M is at least any one of In, Ga, Si, Sn, Pb, Pd, Pt, Zn, Au, Ag, Zr, Hf, V, Nb, Ta, Cr, Co, Mo, Mn, Bi, O, N and S).

Claim 11. An optical information recording medium according to claim 9 or 10, wherein said crystal state of said recording layer is defined as an unrecorded state [and an erased state, while said amorphous state thereof is defined as a recorded state] and an erased state, while said amorphous state thereof is defined as a recorded state so as to [performed] <u>perform</u> recording or erasing of information.

Claim 12. A method of manufacturing an optical information recording medium having a recording layer, containing excessive Sb in SbTe eutectic point, in which phase change is made reciprocally between a crystal state and amorphous state with optical characteristic being differed from each other by irradiation of an optical beam, wherein

an initialization step is performed with another optical beam having an elliptical beam shape of which minor axis is 0.1-10 μm after forming at least said recording layer on a substrate, by scanning said another optical beam to the recording layer in a direction of said minor axis so as to make the recording layer in the crystal state, further wherein

said scanning of said optical beam is performed in a speed in a range of 50-80% of a maximum usable linear velocity for over-writing of the recording layer.